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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/430,501 | 10/29/1999 | DONGMING HWANG | RAL9-99-0110 | 7395 |
| 25299 | 7590 | 01/10/2005 | EXAMINER | |
| IBM CORPORATION PO BOX 12195 DEPT 9CCA, BLDG 002 RESEARCH TRIANGLE PARK, NC 27709 | | | | KUMAR, PANKAJ |
| | | ART UNIT | | PAPER NUMBER |
| | | | | 2631 |

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|--------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/430,501 | HWANG ET AL. |
| | Examiner | Art Unit |
| | Pankaj Kumar | 2631 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 23 August 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 3-10, 17, 20-27 and 30-37 is/are allowed.
- 6) Claim(s) 1, 11-13, 18 and 28 is/are rejected.
- 7) Claim(s) 2, 14-16, 19 and 29 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant says that claim 13 has been amended to include recitations of the independent claims and thus they should be allowed. This is not persuasive since claim 13 does not include all of the recitations from the independent claims and any intervening claims. For instance, claim 13 was previously dependent on claim 12 and claim 13 is missing FSK which is in claim 12.
2. Applicant's remaining arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Information Disclosure Statement

3. In the information disclosure statement (IDS) dated July 3, 2000, items 1-159 were initialed and considered.
4. In the information disclosure statement (IDS) dated September 22, 2003 (which was mailed by the office with the advisory action of November 6, 2003), items 1-159 were assumed to be repeats of items 1-159 already initialed and considered in the IDS dated July 3, 2000. Items 160-198 and 200-216 were initialed and considered. Item 199 was the same as item 174 already initialed and considered. Items 217-221 and 224-268 listed page numbers but those pages were not provided for consideration – only the abstract was provided. Accordingly, items 217-221 and 224-268 were initialed and considered only for their abstract. Items 270-273 were also initialed and considered.

5. The office cannot locate items 222 and 223 and thus these items have not been considered.
6. It would be appreciated if the applicant can resubmit items 222 and 223 so that they may be considered.

Response to Amendment

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
8. Claims 1, 11, 12, 13, 18 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson 5,260,974 in view of Basehore 5,272,657. Here is how the references teach the claims:
9. As per claim 1: A method for modem carrier drop detection comprising the steps of: demodulating a received signal to provide signal data (Johnson fig. 2: 28); detecting a signal strength for a portion of the received signal (Johnson fig. 11a: amplitude of packets of data – office interprets this as signal strength for a portion or packet of the entire data) corresponding to a selected data pattern in the signal data (this is not in Johnson but would be obvious as explained below); establishing a carrier drop detection threshold at a determined level relative to the signal strength (Johnson fig. 11a: carrier detection threshold 140 changes relative to the noise 141, 143 and packets of data 139 which office interprets in combination as establishing relative

to the signal strength; col. 15 lines 27-28; fig. 2: adaptive carrier detect threshold 29; col. 17 lines 52-53: “threshold value is recomputed until the carrier signal is detected”); and detecting a carrier drop based on the carrier drop detection threshold (Johnson fig. 16: if threshold is unacceptable, a channel is not used – office interprets this as dropping the carrier; fig. 11b).

10. What Johnson does not teach is detecting a signal strength for a portion of the received signal corresponding to a selected data pattern in the signal data. What Basehore 5,272,657 teaches is detecting a signal strength for a portion of the received signal (Basehore fig. 1: magnitude comparators are determining the magnitude – which office interprets as signal strength - of each of the patterns in the serial data in – which office interprets as portions of the received signal) corresponding to a selected data pattern (Basehore fig. 1: pattern data 0 to pattern data 7) in the signal data (Basehore fig. 1: serial data in). Thus, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to arrive at the detecting a signal strength for a portion of the received signal corresponding to a selected data pattern in the signal data as recited by the instant claims, because the combined teaching of Johnson with Basehore suggest establishing a carrier drop detection threshold at a determined level relative to the signal strength for a portion of the received signal corresponding to a selected data pattern in the signal data as recited by the instant claims. Furthermore, one of ordinary skill in the art, would have been motivated to combine the teachings of Johnson with Basehore because Johnson suggests detecting a signal strength for a portion of the received signal (something broad) in general and Johnson suggests the beneficial use of establishing a threshold relative to the signal strength for a portion of the received signal corresponding to a selected data pattern in the signal data (for example, Basehore col. 2 lines 30-53 discusses

recognizing patterns even in changing environments) in the analogous art of updating threshold (Basehore title) in systems using data.

11. As per claims 11, 18 and 28, the same reasoning used to reject claim 1 applies for claims 11, 18 and 28.

12. As per claim 12. (Original) A carrier drop detection system according to Claim 11 wherein the demodulator (Johnson fig. 2: 28) is a frequency shift keyed (FSK) demodulator (not in Johnson). Johnson in view of Basehore does not teach FSK demodulator. However, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to modify the prior art teaching of Johnson in view of Basehore by replacing the demodulator with the FSK demodulator as recited by the instant claims, because Johnson suggests various types of demodulators (like BPSK, QPSK col. 6) in the analogous art of updating the carrier drop threshold.

13. As per claim 13. (Currently amended) A carrier drop detection system comprising: a demodulator that demodulates a received signal to provide signal data (Johnson fig. 2: 28); a threshold circuit coupled to the demodulator that latches a carrier drop detection threshold at a level based on the received signal responsive to a selected data pattern in the signal data (Johnson fig. 11a: carrier detection threshold 140 changes relative to the noise 141, 143 and packets of data 139 which office interprets in combination as establishing relative to the signal strength; col. 15 lines 27-28; fig. 2: adaptive carrier detect threshold 29; col. 17 lines 52-53: "threshold value is recomputed until the carrier signal is detected"); and a carrier drop detection circuit coupled to the threshold circuit that detects a carrier drop based on the carrier drop detection threshold (Johnson fig. 16: if threshold is unacceptable, a channel is not used – office

interprets this as dropping the carrier; fig. 11b) wherein the carrier drop detection circuit further comprises: an energy detector having an output corresponding to an energy level of the received signal (Johnson fig. 11a: amplitude of packets of data – office interprets this as signal strength for a portion or packet of the entire data; fig. 2 pulse detector 20), the output of the energy detector being latched responsive to the selected data pattern in the signal data (this is not in Johnson); and a comparator (Johnson fig. 16: comparators 175, 176; col. 18 lines 30-31; fig. 2: 33) coupled to the output of the energy detector and to the carrier drop detection threshold (Johnson fig. 2 element 33 is shown in fig. 16; element 29 is partly shown in fig. 14 based on col. 2 lines 60-62; elements 20 and 22 are shown in fig. 3).

14. What Johnson does not teach is detecting a signal strength for a portion of the received signal corresponding to a selected data pattern in the signal data. What Basehore 5,272,657 teaches is detecting a signal strength for a portion of the received signal (Basehore fig. 1: magnitude comparators are determining the magnitude – which office interprets as signal strength - of each of the patterns in the serial data in – which office interprets as portions of the received signal) corresponding to a selected data pattern (Basehore fig. 1: pattern data 0 to pattern data 7) in the signal data (Basehore fig. 1: serial data in). Thus, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to arrive at the detecting a signal strength for a portion of the received signal corresponding to a selected data pattern in the signal data as recited by the instant claims, because the combined teaching of Johnson with Basehore suggest establishing a carrier drop detection threshold at a determined level relative to the signal strength for a portion of the received signal corresponding to a selected data pattern in the signal data as recited by the instant claims. Furthermore, one of

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ordinary skill in the art, would have been motivated to combine the teachings of Johnson with Basehore because Johnson suggests detecting a signal strength for a portion of the received signal (something broad) in general and Johnson suggests the beneficial use of establishing a threshold relative to the signal strength for a portion of the received signal corresponding to a selected data pattern in the signal data (for example, Basehore col. 2 lines 30-53 discusses recognizing patterns even in changing environments) in the analogous art of updating threshold (Basehore title) in systems using data.

Allowable Subject Matter

15. Claims 2, 14-16, 19, 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
16. Claims 3-10, 17, 20-27, 30-37 are allowed for reasons cited in prior action.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (571) 272-3011. The examiner can normally be reached on Mon, Tues, Thurs and Fri after 8AM to after 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PK

